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INAUGURAL ADDRESS

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PRESIDENT OF THE CONGRESS.

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IN looking forward to such a meeting as the present, perhaps the most obvious reflection that occurs to the mind is the indication which it affords of the progress of science, which I take to mean exact knowledge of subjects admitting of exact knowledge. The advances which have been made in the accurate knowledge of nature during the last half century have affected and are affecting not only our intellectual but our political and social life in a vast variety of ways, some of them beneficial, others of them to be deplored: for the increase of our control over the powers of nature which comes with the increase of knowledge is good or bad according to the motives with which those powers are used and the ends towards which they are directed.

It would be of great interest to trace the effects of the electric telegraph on the relations of principal and agent in trade, on the functions of diplomats in the councils of nations, on the spread of betting throughout the working populations of this country; to discuss the influence, not only upon international law and the rights of belligerents and neutrals, but upon the power and destiny of nations, of the new developments of the means of destruction by sea and by land; and, to come nearer to the objects of this Institute, to investigate the profound influence which bacteriology has had upon the growth of medical science and the formation of what may almost be called a new branch of knowledge.

And if it would be interesting thus to trace the parts of human life which have been influenced by the spread of science, it would be not less interesting to notice the regions of thought and the branches of human knowledge which remain unaffected by this advance. For, after all, it is not the greatest things which admit of the most precise knowledge and which are capable of being weighed or measured or seen through the microscope. Except to those whose mental vision is obscured by a too exclusive devotion to a certain class of investigations, the sense of beauty and sublimity, the emotions and affections of the human soul, the conception of duty, "the thoughts that wander through eternity," all these remain untouched and untouchable by any advance in science, and we seem to learn that the greatest and not the least of things are those which admit of no exact knowledge.

But from reflections so discursive as these I must recall myself to the point which I had more immediately in view, and must observe that one of the effects of an increase in scientific knowledge has been to increase the burthen of our duties, both as individuals and as citizens. In former years, the head of a household, in the event of the appearance of scarlet fever or even of smallpox, called in a doctor and perhaps a nurse, and kept the door of the bedroom shut. His drains he was content to regard as perfect, except when some sudden outburst of horrible odours called upon him to throw two or three buckets full of water down the orifices in his house. When he had done these things he had performed the whole duty of man. Now all is changed; the nurse and the patient are secluded in a separate room or rooms; the sheet wetted with a disinfectant fluid has to be nailed up at the point of communication with the rest of the house; the doctor has to wash his hands with disinfectants. When the rooms are vacated the paperhanger, the painter and the whitewasher have to be called in; the public officer of health has to be notified; and then the drains have to be looked to, and every new doctor of drains finds that the work of his predecessor was all wrong, that the system was faulty, but that now at last perfection is in sight. Such are the responsibilities and such are the sufferings of the modern head of a house; and when he has done all that I have mentioned, he is still left with an uneasy mind, in doubt whether he or the bacilli will win the day.

And as is the fate of the individual so is the fate of the municipality or other group of citizens. The State rightly requires of such bodies that they shall make due provision for what we now call public health: that they shall at any rate deliver their citizens from the dangers arising from the accumulation of putrefying matter and the contents of the drains;

and here the local body corporate finds itself in a dilemma: if it uses its nearest stream as an outfall and so defiles the water, it becomes obnoxious to the attacks of the riparian proprietors; or if it strive to put its refuse upon the land, it too often creates a nuisance to the adjoining occupants, and is the object of attack from the injured landlords and tenants.

From this conflict of duties and rights has arisen a vast volume of litigation and mandamuses to compel public bodies to perform their duties, and injunctions to prevent their interfering with private rights have been frequent as blackberries in autumn: and, as was to be expected, this mass of litigation has evoked the labours of a great army of experts, of engineers, architects, chemists, physicists, and other sanitary experts, and these have contended one against the other, and supported their opposing views with much scientific lore. To the onlooker at these contests there naturally arises the thought that a science which can admit of such a conflict of opinions must be in a more or less chaotic condition, and that much yet remains to be done before it can be considered to have reached the condition of an exact science, or of an unfailing guide to those who wander in ignorance and darkness.

Thus the bodies corporates of the country, and the individual householders, feel the burthen of these duties and responsibilities which the increase of knowledge has laid upon them; and from such dilemmas, such pressing difficulties, such conflicting opinions and advice we turn to you, ladies and gentlemen, to deliver us, by the deliberations of your several sections, and by the accumulated experience and wisdom which you possess. We look to you to restore to us the peace we enjoyed in the days of our ignorance, and to make the new life not only more healthful than the old, but as full of repose and peace. I know that the questions involved in sanitary science are many of them of much intricacy and difficulty, as well as of much interest, but we are all confident that as you pursue your labours from day to day and year to year you will more and more approach to an exact knowledge of the matters which arise, and will thus afford a more and more certain guidance to a public who earnestly desire some uniformity of advice from those whom they trust in such matters.

It has been often observed that arts and sciences, no less than cities and people, have their periods of advance and of retrocession, of rise and of decline; and to this observation sanitary science, I conceive, offers no exception. The ordinances of Manu, one of the most venerable of legal institutes, mention offences in diet as one of the things through which "the genius of death becomes eager to destroy" men, (translation by Sir W. Jones, p. 123): and the Levitical laws of the Jews

contain, as is familiarly known, many enactments of a sanitary character, especially in relation to leprosy: and so remote seems to have been the origin of these provisions, alike in Hindustan and Judea, that they appear already to us in the form of divine commands. Amongst the Greeks I know of no earlier traces of a consideration for healthful practices than are to be found in some passages of Hesiod, where he enumerates for us some of the rules of rural life in Bœotia some 700 or 800 years before Christ. The warning not to enter the house when affected by certain kinds of pollution, the prohibition of the doing of certain acts with unwashed hands, and of the fouling of streams and fountains, are all supposed to have the sanction, more or less direct, of the gods, or all may probably have had their origin in a care for the general health.

But it is to the Romans, and not to the Greeks that we look for the first practical works of a sanitary kind; and their earliest structures are such as still to challenge our admiration and our wonder. According to the Roman historians, to whom in this matter we may, I believe, give full credence, Tarquinus Priscus began and Tarquinius Superbus completed the great works for the drainage of Rome—of which the Cloaca maxima was the most remarkable feature. These works excited the warm admiration of the encyclopædian Pliny, and their construction appeared to Livy and the other Roman historians as one of the most remarkable of the works of the regal period at Rome: and the remains of the Cloaca maxima still pouring its effluent into the Tiber justly excite the admiration of the modern antiquary. Probably no drainage operation ever had so mighty an influence on the history of the world, for the result of these works was not merely to carry away polluting matter but to convert the low swampy land lying in the midst of the hills of Rome into the solid ground on which the Forum Romanum was constructed, and thus to afford a common meeting place for the inhabitants of the several communities of the several hills of Rome, that was to form the very home and nursery of the fierce Roman people, from whence they went forth conquering and to conquer.

Even more remarkable than the case of the Romans in the drainage of their city were their labours for the supply of their city with pure and abundant water. From the time of the great Censor, Appius Claudius, the builder of the Appian road as well as the great Appian aqueduct (312 B.C.) to the time of the Emperor Alexander Severus (cir. A.D. 221) Rome went on adding aqueduct to aqueduct, some of which still supply the city with water, until no less than eleven streams yielded their daily supply to the people of the Imperial city.

Another way in which the Romans showed their appreciation of practical

sanitation was the use they made of warm and medicinal natural springs. Almost every such spring within the wide circuit of their Empire still bears traces of their munificent baths. Our neighbouring city of Bath, the Aquæ Solis of the Romans, is a good illustration of the care and splendour with which they adorned the hot springs, to the use of which they were so much addicted.

A few months ago I visited in North Africa the remains of the town of Thamugas (now Timgad), built by Trajan for the veterans of the third legion, and I was much struck by the evidence which they afford of the care of these matters exhibited in the construction of the town. These ruins now stand in solitary grandeur amidst the desolate Aurès mountains, almost on the northern boundary of the Sahara Desert, and rival if they do not excel Pompeii in the impression they make upon the mind of the beholder; and not the least surprising thing in this magnificent city is the system of drains which were constructed down all its principal thoroughfares—drains that recall if they do not equal the dimensions of the Cloaca maxima of Rome. The city, moreover, was abundantly furnished with magnificent baths and cisterns of water; and in the house, I might almost say the palace, of Faustus, a man of great distinction in this remote city, one still sees the bath-room, and on each side, as you approach it, two pillars or pedestals, one inscribed with the name of the god Æsculapius and the other with that of the goddess Hygieia—so consciously did the Romans in this remote spot recognize the duty of seeking after health.

It is needless to observe that the Romans were without any of those scientific appliances on which we so largely depend, and were without that exact knowledge of the enemies to health upon which we rely. Nevertheless we find, as I have shown, that they were great sanitary engineers and constructed works of water supply and drainage not only in their capital but throughout their Empire upon which we cannot even now look without something almost of envy. If Rome in her ignorance could do all this for herself and for her remote provinces, what ought this country to do for herself and all the branches of her Empire?

Upon all this splendid civilization of Rome came down the barbarous North. The internal forces of the Empire were unequal to resist the impacts of Goth, Vandal and Lombard, and the fabric of the Western Empire went to wreck and ruin, and with it disappeared all thought of sanitary science—to remain, so far as I know, dead during the dark ages and to revive only in the course of the last century, and then in a new form and with means of investigation and of the ascertainment of exact

knowledge of which the wisest Roman never dreamed. Under such favourable conditions it is your good fortune to pursue your studies for the alleviation of some of the ills that beset poor humanity.

The work of Great Britain in the matter of sanitation is to be learned in part from the works which she has executed, but perhaps more from the legislation which she has enacted. The successive volumes of the statutes at large are, as it were, an automatic record of the thoughts and aspirations of the British people from year to year, and they testify to the fact that the first serious efforts to make life more healthy in this country date from the earlier days of Her late Majesty's reign.

Before that time there was no general legislation on the subject. Now and then some particular nuisance or inconvenience attracted the attention of Parliament, and municipal bodies or defined localities not unfrequently obtained powers in relation to sanitary matters within their jurisdiction, but it was not until the year 1847 that any attempt was made at unity in such legislation. In that year several Acts were passed which contained what may be called model codes or collections of provisions with respect to such matters as markets and fairs, gas works, cemeteries, and town improvements. But these statutes, contrary to the usual character of Acts of Parliament, had no operation until it was from time to time enacted by statutes referring to them that they should apply to this or that locality. In the following year, 1848, the first general public health Act was passed, which constituted a central controlling authority, the general board of health, and provided for the creation, by orders in Council, of local boards of health.

In the early seventies so great was the interest that had been excited in questions of sanitation that the brilliant leader of the conservative party in a speech at Manchester, in 1871, propounded as the watchword for his followers the maxim "Sanitas sanitatum et omnia sanitas," parodying by the alteration of a single letter the Vulgate rendering of one of the saddest utterances of the sad Hebrew moralist, and thus producing a jingle of words which will perhaps hardly bear a very precise analysis, but may have conduced to the legislation of the following year. The Public Health Act of 1872 was the first to apply legislation to the whole country outside the metropolis, to divide all England and Wales into sanitary districts, some urban and some rural, and to provide a local body in each district for the due administration of the laws relating to health. In 1875 there was passed a further Act which gathered together in one body the whole of the legislation on this subject, and thus forms a very important epoch in the history of sanitary legislation. In the following

year your Institute was founded with the intention of promoting yet further legislation, and for the purpose of collecting and imparting information upon all matters connected with the subject of public health, and your first two Congresses were presided over by Sir Benjamin Richardson and Sir Edwin Chadwick, two of the most distinguished advocates in those early times of the study of public health.

In the interval between those days and the present much has no doubt been done, but much remains to do, not only by a body like yourselves devoted to questions of public health, but by those who are concerned with the general social condition of our people; for health and morals are closely connected the one with the other. I trust that the labours upon which you are about to enter may be very fruitful of good results, and from those labours I will no longer detain you, except to express to you my high appreciation of the honour which you have done me in asking me to preside over your meeting here to-day.